

magnesium, mercury] or a combination thereof; A is copper [, bismuth, titanium, tungsten, zirconium, tantalum, niobium, vanadium or a combination thereof]; "a" is 1 to 2; "b" is 1; "x" is about 0.01 to about 0.5; and "y" is about 2 to about 4.

10. (Amended) The structure of Claim [9] 11, wherein the metal oxide complex has a first layered phase adjacent said copper substrate as a [glossy] glassy insulating layer phase, a second superconducting phase layered on the first phase, and a third phase layered on the second phase which is an insulator phase.

11. (Amended) The structure of claim [10] 9, wherein L is yttrium, M is barium and A is copper.

12. (Amended) A method for making a superconducting metal oxide complex, comprising the steps of:

mixing solid compounds containing L, M, A and O in amounts appropriate to yield the formula $(L_{1-x}M_x)^a b^y$, wherein L is lanthanum, lutetium, yttrium, scandium or a combination thereof; M is barium, strontium, [calcium, magnesium, mercury] or a combination thereof; A is copper [, bismuth, titanium, tungsten, zirconium, tantalum, niobium, vanadium or a combination thereof]; "a" is 1 to 2; "b" is 1; "x" is about 0.01 to about 0.5; and "y" is about 2 to about 4;

depositing the mixture on a copper substrate;
compressing the mixture on the copper substrate to form the oxide mixture into a layer on the copper substrate;